UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,878	03/31/2000	Koichi Kuroiwa	P108390-00002	1786

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EXAMINER
MOLINARI, MICHAEL J

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 06/09/2003

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PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/540,878	KUROIWA ET AL.
	Examiner	Art Unit
	Michael J Molinari	2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _31 March 2000_ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-52_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-3,7,9-11,13,14,16-18,20-33,35-39,41-43 and 45-52_ is/are rejected.

7) ☒ Claim(s) _4-6, 8, 12, 15, 19, 34, 40, and 44_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-3, 7, 9-11, 14, 16, 20-32, 35-38, 41-43 and 45 are rejected under 35

U.S.C. 102(e) as being anticipated by Higuchi et al. (U.S. Patent No. 6,167,037).

3.   Referring to claim 1, Higuchi et al. disclose a cell search method wherein a station

detects a correlation value between an input signal and a spreading code generated by the station

itself, and detects a correlation peak value in a predetermined unit of slots, and a threshold value

is provided to be compared with the detected correlation value (see column 11, lines 30-48).

4.   Referring to claim 2, Higuchi et al. disclose that a correlation value exceeding said

threshold value is stored in a memory (see column 11, lines 46-48).

5.   Referring to claim 3, Higuchi et al. disclose that timing data on the timing at which said

correlation value exceeds said threshold value is stored in memory (see column 11, lines 46-48).

6.   Referring to claim 7, Higuchi et al. disclose that said threshold value can be arbitrarily set

(see column 5, lines 20-23).

7.   Referring to claim 9, Higuchi et al. disclose a communication synchronization apparatus

with which a station detects a correlation value between an input signal and a spreading code

generated by the station itself (see column 11, lines 30-48), and detects a correlation peak value

in a predetermined unit of slots to detect a synchronization point of said input signal (see column

11, lines 46-48), said apparatus comprising a comparison section for comparing the detected

correlation value with a predetermined threshold value (see Fig. 4, #9).

8.   Referring to claim 10, Higuchi et al. disclose a first storage section for storing a

correlation value exceeding said threshold value, obtained as a result of comparison by said

comparison section (see column 11, lines 46-48 and see Fig. 9, #S2200).

9.   Referring to claim 11, Higuchi et al. disclose a second storage section for storing timing

data on the timing at which said correlation value exceeds the threshold value (see column 11,

lines 46-48 and see Fig. 9, #S2200 and note that the information stored in memory contains

timing information).

10.   Referring to claim 14, disclose a register for arbitrarily setting said threshold value (see

column 5, lines 20-23).

11.   Referring to claim 16, Higuchi et al. disclose an end notification section for notifying the

completion of the detection process for said correlation peak value when the detection process is

completed (see column 5, lines 14-19).

12.   Referring to claim 20, Higuchi et al. disclose a computer-readable storage medium for a

communication synchronization apparatus with which a station detects a correlation value

between an input signal and a spreading code generated by the station itself, and detects a

correlation peak value in a predetermined unit of slots to detect a synchronization point of said

input signal, said medium storing a program for causing a computer to realize a comparison

function of comparing the detected correlation value with a predetermined threshold value (see column 11, lines 30-62).

13.   Referring to claim 21, Higuchi et al. disclose a program for causing said computer to realize a control function of controlling to store a correlation value exceeding said threshold value, obtained as a result of comparison by said comparison function, in a memory (see column 11, lines 30-62).

14.   Referring to claim 22, Higuchi et al. disclose a program for causing said computer to realize a control function of controlling to store timing data on the timing at which said correlation value exceeds said threshold value, in a memory (see column 11, lines 30-62).

15.   Referring to claim 23, Higuchi et al. disclose a cell search method wherein a station detects, each slot in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, the detection process for correlation value is performed over several slots, the correlation values obtained in the slots are integrated to detect a correlation peak value, and the integration process is ended when the number of paths at which an integrated correlation value has reached a referenced set value, reaches a path count set value (see column 11, lines 30-62).

16.   Referring to claim 24, Higuchi et al. disclose that the comparison to check whether an integrated correlation value has reached said reference set value, is performed on the basis of power values (see column 19, lines 63-67 and column 20, lines 1-4).

17.   Referring to claim 25, all operations performed by computers are performed on the basis of voltage values, therefore performing a comparison check on the basis of voltage values is inherent in a system such as that of Higuchi et al.

18.   Referring to claim 26, Higuchi et al. disclose that said reference set value can be arbitrarily set (see column 5, lines 20-23).

19.   Referring to claim 27, Higuchi et al. disclose that said path count set value can be arbitrarily set (see column 5, lines 14-23 and column 11, lines 30-62).

20.   Referring to claim 28, Higuchi et al. disclose a cell search method wherein a station detects, each slot in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, the detection process for correlation value is performed over several slots, the correlation values obtained in the slots are integrated to detect a correlation peak value, and said method has a first mode in which the integration process is ended when the number of paths at which an integrated correlation value has reached a reference set value, reaches a path count set value, and a second mode in which integration is performed a predetermined number of times (see column 11, lines 30-62, which shows that if the threshold is exceeded, then the process stops, otherwise all values are tried and the one with the highest correlation value is chosen).

21.   Referring to claim 29, Higuchi et al. disclose that said first and second modes can be arbitrarily selected and set (see column 11, lines 30-62 and note that the modes are arbitrarily selected depending on whether any values exceed the threshold and are arbitrarily set depending on how long it takes to find a value that exceeds the threshold).

22.   Referring to claim 30, Higuchi et al. disclose a communication synchronization apparatus with which a station detects, each slot in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, the detection process for correlation value is performed over several slots, the correlation values obtained in the slots are

integrated to detect a correlation peak value, and thereby a synchronization point of said input signal is detected, said apparatus comprising a comparison section for comparing a calculated integrated correlation value with a reference set value (see column 11, lines 30-62).

23.　　Referring to claim 31, Higuchi et al. disclose a count section for counting the number of paths at which an integrated correlation value has reached said reference set value, obtained as a result of comparison by said comparison section (see column 11, lines 30-62 and note that the apparatus of Higuchi et al. determines the number of paths to be either 1 (when the threshold is exceeded and the value selected) or 0 (if the threshold is not exceeded)).

24.　　Referring to claim 32, Higuchi et al. disclose that integration is ended when the count by said count section reaches a path count set value (the total number of long codes in the system, see column 11, lines 30-62).

25.　　Referring to claim 35, Higuchi et al. disclose that comparison by said comparison section is performed on the basis of power values (see column 19, lines 63-67 and column 20, lines 1-4).

26.　　Referring to claim 36, all operations performed by computers are performed on the basis of voltage values, therefore performing a comparison check on the basis of voltage values is inherent in a system such as that of Higuchi et al.

27.　　Referring to claim 37, Higuchi et al. disclose that said comparison section compares an integrated correlation value output from an adder for performing integration, with said reference set value (see Fig. 5, #13).

28.　　Referring to claim 38, Higuchi et al. disclose that said comparison section compares an integrated correlation value output from a memory for storing calculated integrated correlation values, with said reference set value (see column 11, lines 30-62).

29.   Referring to claim 41, Higuchi et al. disclose a communication synchronization apparatus with which a station detects, each slot in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, the detection process for correlation value is performed over several slots, the correlation values obtained in the slots are integrated to detect a correlation peak value, and thereby a synchronization point of said input signal is detected, said apparatus comprising a comparison section for comparing the detected correlation value or a value output from a power conversion device for converting the correlation value into a power value, with a reference set value (see column 11, lines 30-62).

30.   Referring to claim 42, Higuchi et al. disclose a communication synchronization apparatus with which a station detects, each slot in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, the detection process for correlation value is performed over several slots, the correlation values obtained in the slots are integrated to detect a correlation peak value, and thereby a synchronization point of said input signal is detected, said apparatus having a first mode in which integration is ended when the number of paths at which an integrated correlation value has reached a reference set value, reaches a path count set value, and a second mode in which integration is performed a predetermined number of times (see column 11, lines 30-62).

31.   Referring to claim 43, disclose a register for arbitrarily selecting and setting said first and second modes (see column 11, lines 30-62, which shows that if the threshold is exceeded, then the process stops, otherwise all values are tried and the one with the highest correlation value is chosen).

32.   Referring to claim 45, Higuchi et al. disclose a computer-readable storage medium for a

cell search operation in which a station detects, each slot in a predetermined unit, a correlation

value between an input signal and a spreading code generated by the station itself, the detection

process for correlation value is performed over several slots, and the correlation values obtained

in the slots are integrated to detect a correlation peak value, said medium storing a program for

causing a computer to realize a function of ending integration when the number of paths at which

an integrated correlation value has reached a reference set value, reaches a path count set value

(see column 11, lines 30-62).

33.   Claim 51 is rejected under 35 U.S.C. 102(e) as being anticipated by Ryu (U.S. Patent No.

5,995,434).

34.   Referring to claim 51, Ryu discloses a portable terminal apparatus (mobile phone, see

column 1, lines 22-25) wherein a dynamic RAM (see column 1, lines 11-25) is used as a memory

in a portable telephone having at least a function of voice communication through a radio

channel.

Claim Rejections - 35 USC § 103

35.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

36.   Claims 13, 17-18, 33, 39 and 46-48 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Higuchi et al. (U.S. Patent No. 6,167,037).

37.   Referring to claim 13, Higuchi et al. differ from claim 13 in that they fail to disclose that said first and second storage sections are provided in a single memory. However, storing multiple storage sections in a single memory is old and well known in the art and has the advantage of saving money because multiple memories do not have to be supplied. One skilled in the art would have recognized the advantage of providing multiple storage sections in a single memory. Therefore, it would have been obvious for a person with ordinary skill in the art at the time of the invention to provide multiple storage sections in a single memory to achieve the advantage of saving money.

38.   Referring to claim 17, Higuchi et al. differ from claim 17 in that they fail to disclose an overflow notification section for notifying a shortage of storage area in at least one of said first and second storage sections when it occurs. However, overflow notification mechanisms are well known in the memory art and have the advantage of preventing data loss. One skilled in the art would have recognized the advantage of an overflow notification mechanism. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate an overflow notification mechanism into the invention of Higuchi et al. to achieve the advantage of preventing data loss.

39.   Referring to claim 18, Higuchi et al. differ from claim 18 in that they fail to disclose a registration count notification section for notifying the number of correlation values stored in said first storage section. However, the use of a count notification mechanism is well known in the art and has the advantage of improving data management in the system. One skilled in the art would have recognized the advantage of using a count notification mechanism. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to

incorporate the use of a count notification mechanism into the invention of Higuchi et al. to achieve the advantage of improving data management in the system.

40.   Referring to claim 33, Higuchi et al. differ from claim 33 in that they fail to disclose a register for arbitrarily setting said reference set value. However, the use of registers for storing values in such a system is old and well known in the art and has the advantage of providing a means of quickly accessing the reference set value. One skilled in the art would have recognized the advantage of using a register to store a reference set value. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a register for storing a reference set value into the invention of Higuchi et al. to achieve the advantage of providing a means of quickly accessing the reference set value.

41.   Referring to claim 39, Higuchi et al. differ from claim 39 in that they fail to disclose a register for arbitrarily setting said reference set value. However, the use of registers for storing values in such a system is old and well known in the art and has the advantage of providing a means of quickly accessing the reference set value. One skilled in the art would have recognized the advantage of using a register to store a reference set value. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a register for storing a reference set value into the invention of Higuchi et al. to achieve the advantage of providing a means of quickly accessing the reference set value.

42.   Referring to claim 46, Higuchi et al. disclose a communication synchronization apparatus for performing a cell search operation in which a station detects a correlation value between an input signal and a spreading code generated by the station itself, and detects a correlation peak value in a predetermined unit of slots, said apparatus comprising a memory to be used in said cell

search operation (see column 11, lines 30-62). Higuchi et al. differ from claim 46 in that they fail to disclose the use of DRAM for the memory. However, the use of DRAM is well known in the art and has the advantage of being less expensive than other memory options. One skilled in the art would have recognized the advantage of using DRAM. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of DRAM for memory into the invention of Higuchi et al. to achieve the advantage of saving money.

43.   Referring to claim 47, Higuchi et al. disclose the use of memory for storing integration results in said cell search operation (see column 11, lines 30-62). Higuchi et al. differ from claim 47 in that they fail to disclose the use of DRAM for the memory. However, the use of DRAM is well known in the art and has the advantage of being less expensive than other memory options. One skilled in the art would have recognized the advantage of using DRAM. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of DRAM for memory into the invention of Higuchi et al. to achieve the advantage of saving money.

44.   Referring to claim 48, it is well known in the art to perform data access during the refresh cycle of DRAM and would have been obvious to a person with ordinary skill in the art at the time of the invention to do so.

45.   Referring to claim 49, Higuchi et al. disclose a communication synchronization apparatus for performing a cell search operation in which a station detects, each of several slots in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, and the correlation values obtained in the slots are integrated to

detect a correlation peak value, said apparatus comprising a memory used for storing the integration results of correlation values (see column 11, lines 30-62). Higuchi et al. differ from claim 49 in that they fail to disclose the use of DRAM for the memory. However, the use of DRAM is well known in the art and has the advantage of being less expensive than other memory options. One skilled in the art would have recognized the advantage of using DRAM. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of DRAM for memory into the invention of Higuchi et al. to achieve the advantage of saving money.

46.   Referring to claim 50, Higuchi et al. disclose a communication synchronization apparatus for performing a cell search operation in which a station detects, each of several slots in a predetermined unit, a correlation value between an input signal and a spreading code generated by the station itself, and the correlation values obtained in the slots are integrated to detect a correlation peak value, wherein a memory is used in a correlator which detects correlation values in the slots in the manner of detecting the correlation value in each subunit obtained by dividing said spreading code, storing the correlation values in said memory, and outputting the sum of the correlation values of all subunits (see column 11, lines 30-62). Higuchi et al. differ from claim 50 in that they fail to disclose the use of DRAM for the memory. However, the use of DRAM is well known in the art and has the advantage of being less expensive than other memory options. One skilled in the art would have recognized the advantage of using DRAM. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of DRAM for memory into the invention of Higuchi et al. to achieve the advantage of saving money.

47.   Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu as applied to

claim 51 above, and further in view of Tanaka et al. (U.S. Patent No. 6,011,709).

48.   Referring to claim 52, Ryu differs from claim 51 in that he fails to disclose that data

access occurs in said dynamic RAM within its refresh cycle. However, DRAM that has

coincident refresh and access cycles is well known in the art. For example, Tanaka et al. teach

the use of DRAM with coincident refresh and access cycles, which has the advantage of being

more efficient. One skilled in the art would have recognized the advantage of using DRAM with

coincident refresh and access cycles as taught by Tanaka et al. Therefore, it would have been

obvious to a person with ordinary skill in the art at the time of the invention to incorporate the

use of coincident refresh and access cycles as taught by Tanaka et al. into the invention of Ryu to

achieve the advantage of improving efficiency.

Allowable Subject Matter

49.   Claims 4-6, 8, 12, 15, 19, 34, 40 and 44 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

50.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

51.   U.S. Patent No. 6,310,856 to Taipale teaches the general method used for

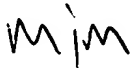synchronization between a mobile terminal and a base station.

52.   U.S. Patent No. 5,544,155 to Lucas et al. teaches a method and apparatus for performing

synchronization between a mobile station and a base station in a CDMA network.

53.   U.S. Patent No. 5,825,835 to Kingston et al. teaches an acquisition method in a CDMA
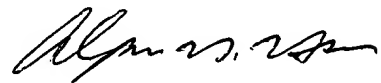
network.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J Molinari whose telephone number is (703) 305-5742.

The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9314 for regular

communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Michael Joseph Molinari
May 19, 2003

ALPUS H. HSU
PRIMARY EXAMINER